

Amendments to the Claims

1 1. (currently amended) A method for processing a compressed input video,
2 comprising:
3 decoding the compressed input video to produce pixels of an interlaced
4 picture, the interlaced picture having a first spatial resolution, and a top-field and a
5 bottom-field;
6 producing, for each macroblock of pixels in the ~~interlace~~ interlaced picture, a
7 macroblock coding type, in which the macroblock coding type includes a macroblock
8 motion type and a macroblock transform type;
9 filtering adaptively ~~while downsampling~~ the top-field and the bottom-field of
10 the interlaced picture according to the macroblock coding type and the macroblock
11 transform type to produce a progressive picture with a second spatial resolution less
12 than the first spatial resolution, in which the filtering ~~and the downsampling is~~
13 performed jointly jointly performs de-interlacing and downsampling of the interlaced
14 picture; and
15 encoding the progressive picture.

2. (canceled)

1 3. (previously presented) The method of claim 1, in which the macroblock coding
2 type includes intra-coding and inter-coding.

1 4. (previously presented) The method of claim 1, in which the macroblock transform
2 type includes a frame-based transform and a field-based transform.

- 1 5. (previously presented) The method of claim 1, in which the macroblock coding
2 type further includes a macroblock motion type and corresponding motion vector
3 when the macroblock coding type is inter-coding.
- 1 6. (original) The method of claim 5, in which the macroblock motion type includes
2 frame-based and field-based.
- 1 7. (original) The method of claim 1, in which the filtering includes frame-based
2 filtering and field-based filtering.
- 1 8. (original) The method of claim 7, in which the filtering is field-based when the
2 macroblock coding type is inter-coding and the macroblock motion type is field-
3 based.
- 1 9. (previously presented) The method of claim 7, in which the filtering is field-
2 based when the macroblock coding type is inter-coding, the macroblock motion
3 type is frame-based, and an absolute value of motion vectors corresponding to the
4 macroblock are less than a threshold.
- 1 10. (original) The method of claim 9, in which the threshold equals zero.
- 1 11. (original) The method of claim 9, in which the threshold is greater than zero.
- 1 12. (original) The method of claim 7, in which the filtering is field-based when the
2 macroblock coding type is intra-coding and the macroblock transform type is field-
3 based.

1 13. (original) The method of claim 7, in which the filtering is frame-based when
2 the macroblock coding type is intra-coding and the macroblock transform type is
3 frame-based.

1 14. (previously presented) The method of claim 7, in which the filtering is frame-
2 based when the macroblock coding type is inter-coding and the macroblock motion
3 type is frame-based, and an absolute value of motion vectors corresponding to the
4 macroblock are greater than or equal to a threshold.

1 15. (original) The method of claim 7, in which the filtering is frame-based and
2 operates on input samples from the top-field and bottom-field of the interlaced
3 picture.

1 16. (original) The method of claim 7, in which the filtering is field-based and
2 operates on input samples from the top-field or bottom-field.

1 17. (original) The method of claim 7, in which the filtering is field-based and
2 operates on input samples from the bottom-field.

1 18. (previously presented) The method of claim 1, in which the encoding
2 compresses the progressive picture.
3

4 19. (original) The method of claim 1, further comprising:
5 rendering the progressive picture on a display device.

20. (currently amended) A system for processing a compressed input video, comprising:

means for decoding the compressed input video to produce pixels of an interlaced picture, and producing, for pixels of each macroblock, a macroblock coding type, in which the macroblock coding type includes a macroblock motion type and a macroblock transform type, the interlaced picture having a first spatial resolution, and a top-field and a bottom-field; ~~and~~

means for ~~filtering, adaptively, while downsampling~~ filtering adaptively the top-field and the bottom-field of the interlaced picture according to the macroblock coding type and the macroblock transform type to produce a progressive picture with a second spatial resolution less than the first spatial ~~resolution~~; resolution, in which the filtering jointly performs de-interlacing and downsampling of the interlaced picture; and

an encoder configured to compress the progressive picture.